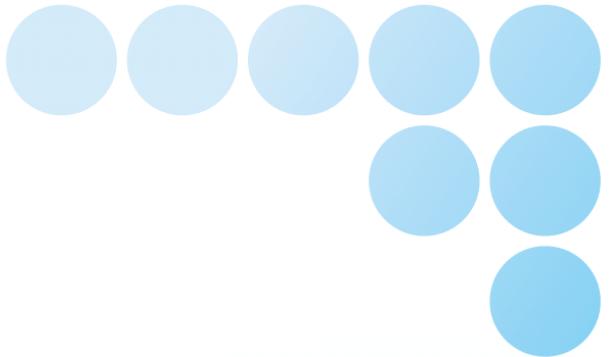


# Smart Camera FQ2 Series

FQ2-\*\*\*\*

## FQ2 Simulator Instruction Manual



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# 1. Preface

## 1.1. Preface

Thank you for purchasing FQ2 Smart Camera series.

This instruction manual explains key functions and capabilities to use FQ2 Simulator. Please follow the rules listed below when you use FQ2 Simulator.

- Have a specialist with knowledge of electricity operate FQ2 Simulator.
- Read this manual carefully, understand the contents prior to use, and use FQ2 Simulator in a correct manner.
- Keep this manual securely at a place where it is easily accessible.

No portion of this manual may be reproduced in any form without prior permission of the publisher.

The contents of this manual including product specifications are subject to change without prior notice to follow improvements of the product.

We do our best to provide perfect information; however if you find errors, or have questions or concerns, please contact our branch or sales office. When you do so, please provide us with the Cat. No.. (manual number) printed on the bottom of the back cover.

## 1.2. Copyright and Trademark

Microsoft, Visual Studio, Visual Basic, and Windows are registered trademarks or trademarks of Microsoft Corporation in US, Japan, and other countries. Intel and Core are trademarks of Intel Corporation in US and other countries. Screen shots of elements of Microsoft products are used with permission from Microsoft Corporation.

The SD logo shown at right is a trademark of SD-3C, LLC. 

Names of other companies or products are registered trademarks or trademarks of the companies.

## 1.3. Symbols in This Instruction Manual

---

Symbols that appear in this manual provide the following information.



### Safety tips

---

Things that should be done or avoided to safely use the product.

---



### Caution

---

Things that should be done or avoided to prevent malfunction, false operation, or other negative effects to the product.

---



### Useful information

---

Things that should be read at certain occasions. Information and tips that help you use the product seamlessly.

---



### Reference

---

Location of detailed or related information.

---

## 1.4. Other Related Manuals

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The following table shows other manuals of FQ2 Smart Camera series that include related information to FQ2 Simulator. Please refer to them together with this manual.

Name of manual	Cat. No.	Model	Use	Content
Smart Camera FQ2-S/CH Series User's Manual	SDNC-707	FQ2-S1 FQ2-S2 FQ2-S3 FQ2-S4 FQ2-CH	Use this manual to learn the basic settings required to use the FQ2-S/CH Smart Camera series.	Information about the product specification, connection and wiring, camera and image adjustment, inspection item settings, operational instructions, and troubleshooting.

Smart Camera FQ2-S/CH Series User's Manual for Communications Settings	SDNC-708	FQ2-S1 FQ2-S2 FQ2-S3 FQ2-S4 FQ2-CH	Use this manual to learn the communication settings of the FQ2 Smart Camera series-S/CH series.	Information about the system configuration, sensor control method, data input or output specification, supported network types, communication setting, and output data setting.
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## **1.5. Revision History**

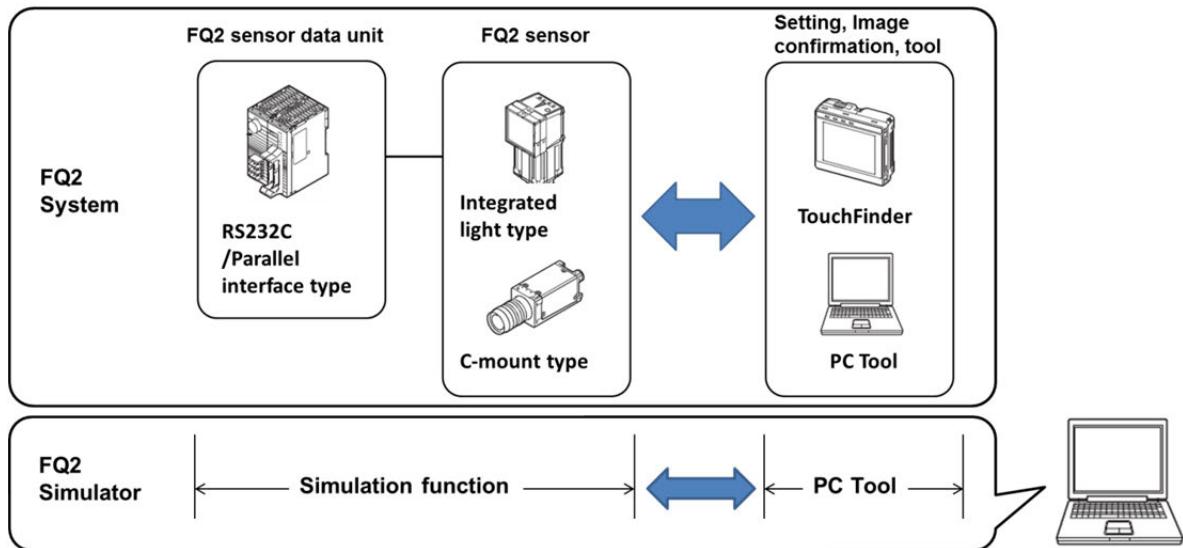
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<b>Revision number</b>	<b>Date of revision</b>	<b>Revised page and reason for revision</b>
01	April 2015	Original Production

## 2. FQ2 Simulator

### 2.1. Overview

FQ2 Simulator lets you experience the usability of the FQ2 Smart Camera series on your computer without having an actual FQ2 sensor of FQ2 Smart Camera series.



FQ2 Simulator loads the setting data of the FQ2 sensor via an SD memory card, and shows the loaded data on your computer. Once data is loaded, they can be edited. Or, you can create setting data for the FQ2 sensor from scratch. You can also simulate inspections on images saved by the FQ2 sensor.



#### Caution

- FQ2 Simulator is free software for exclusive download for registered FQ2 Smart Camera series customers.
- FQ2 Simulator is simulation software which only shows and allows settings of limited items of the camera settings or communication settings. For more details about these restrictions, refer to [2.6. Restrictions](#) in this manual.



#### Useful information

- The free download service requires a SYSMAC ID issued for customers who purchased OMRON factory automation system products, and have completed the user registration. To use the exclusive services, you need to login to the service page with your SYSMAC ID.
- For more information about SYSMAC ID, please visit our website.
- For information about supported image formats, refer to [Supported Image Format](#) in this manual.

## **2.2. Target Readers and Required Skills**

---

The target readers of this manual and target users of FQ2 Simulator are people who are in charge of the operation or management of FQ2 Smart Camera series. For operation and more detailed information about the FQ2 sensor, please refer to the user's manual of Smart Camera FQ2-S/CH Series.

Installation of FQ2 Simulator requires an internet connection and the user rights of an administrator of the destination computer. Please make sure to provide them prior to the installation.

## **2.3. Description of Terms**

---

Term	Description
FQ2 Simulator	Software to simulate the operation of the FQ2 sensor on computers without using an actual FQ2 sensor.
FQ2 Smart Camera series	Vision sensor with integrated camera and controller. The lineup includes FQ2-S1, S2, S3, S4, FQ2-S4, CH. It can easily realize simple inspections, measurements, and scanning/matching of ID, etc. It may also be called <i>the FQ2 sensor</i> in this manual.
TouchFinder	Used for confirmation of images and setting of judgment conditions. Also used to save inspection results or to confirm the status of operation during runtime.
PC Tool (TouchFinder for PC)	Setting tool of the FQ2 sensors that can be used on a computer with the same functions as Touch Finder. It is available for free for registered customers. It is also called <i>TouchFinder for PC</i> , or <i>PC-Tool for FQ</i> , etc.

## 2.4. Recommended Operational Environment

Recommended operational environment for FQ2 Simulator is described below.

Item	Specification
CPU	Compatible CPU with Intel Streaming SIMD Extensions SSE2 or later, OS, Visual Studio, and .NET Framework that you use.
OS	Windows 7 Professional (32 bit/64 bit) Windows 8.1 Pro (32 bit or 64bit) *
.NET Framework	.NET Framework 3.5
Display	XGA (1024 × 768), True Color (32 bit) or greater
Memory	2GB or greater RAM
Available space on HDD	2GB or greater

\*1 If the OS of your computer is Windows 8.1 Pro, installation of .NET Framework 3.5 is required.

## 2.5. Supported Image Format

Image formats that can be used on FQ2 Simulator are described below.

Item	Description
File format	BMP (256 color, 16 bit or 32 bit) IFZ (special format for OMRON vision sensors. IFZ files can be generated on FQ2 Series.)
File name	Only alpha numeric characters can be used.



### Caution

- To use images on FQ2 Simulator, pre-save the images to a folder in a specified location. To learn how to create a folder, refer to [4.3. Loading Measurement Images](#) in this manual.
- While FQ2 Simulator can load image data logged by other sensors than the FQ2 sensor, settings and adjustments made with such images may not be optimized.

## 2.6. Restrictions

FQ2 Simulator is software on which a simulation capability of the FQ2 sensors and PC Tool (TouchFinder for PC) are integrated. Since it simulates the capabilities of the FQ2 sensor only by a computer without an actual FQ2 sensor, it has different ways of operation and restrictions from the actual FQ2 Smart Camera series.

This section describes the overall restrictions, precautions, and other tips for using FQ2 Simulator. More specific settings are described in corresponding sections.

## 2.6.1. Overall Restriction

FQ2 Simulator has the following restrictions.

Restrictions for each tab are described in the next section.

Item	Sort	Description
Supported models of the FQ2 sensor	Common	<p>FQ2 Simulator supports or does not support the following model of the FQ2 sensor.</p> <p>Supported models: FQ2-S1, S2, S3, S4, CH1 Unsupported models: FQ-MS/CR/CR1/CR2</p>
Version of FQ2 Simulator and the FQ2 sensor	Common	<p>Match the version of FQ2 Simulator and the FQ2 sensor to be configured.</p> <p>For unmatched versions, setting data* may not be loaded, or may be incorrectly loaded.</p> <p>1. If the version of FQ2 Simulator and the FQ2 sensor are matched; data created by FQ2 Simulator can be loaded on the FQ2 sensor, and data created by the FQ2 sensor can be loaded on FQ2 Simulator.</p> <p>2. If the version of the FQ2 sensor is newer than the version of FQ2 Simulator; data created by the FQ2 sensor may not be loaded, or incorrectly loaded on FQ2 Simulator.</p> <p>3. If the version of the FQ2 sensor is older than the version of FQ2 Simulator; data created by FQ2 Simulator may not be loaded, or incorrectly loaded on the FQ2 sensor.</p>
Setting and adjusting inspection items on FQ2 Simulator	Common	Load image data logged by the same model FQ2 sensor as the one for which the settings are being done. Otherwise the settings may not be optimized because the available inspection items and functions differ for each model.
Operation on Run Mode	Common	Simulator menu pane is enabled only on Setup Mode. It is disabled on Run Mode.
Image input from camera	Common	Display or inspection using image inputs from cameras are unavailable. FQ2 Simulator displays and inspects using only image files.
Camera setup	Image tab	While the camera settings such as the shutter speed and sensitivity cannot be reflected on the displayed image, their settings can be adjusted on FQ2 Simulator.

I/O connection	Common	Controls by control signals and outputs by status signals using the I/O connection are unavailable.
Logging settings	I/O setting	<p>FQ2 Simulator does not work on Run Mode. Therefore, FQ2 Simulator executes an inspection and logging at the following times to confirm the adjusted settings regardless of the logging settings.</p> <ol style="list-style-type: none"> <li>1. When image data is loaded.</li> <li>2. When a continuous measurement test started.</li> <li>3. When an inspection is executed during a continuous measurement test.</li> </ol> <p>Note that only inspection data is logged. Image data and statistical data cannot be logged.</p>
I/O monitor	I/O setting	<p>Change of the output conditions or confirmation of input using the I/O monitor are unavailable as input of control signals or status signal is unavailable.</p> <p>The status indicator for the input signal does not turn red or change.</p> <p>If you click the status indicator, it will turn red, however no signal is output.</p>
Communication with external devices	Common	Command/response control by communicating with external devices or data output by communication after inspection are unavailable.
Capture button	Common	<p>It captures TouchFinder display only.</p> <p>Use the print screen function of the computer for capturing the whole screen including TouchFinder display, Menu bar, and Simulator menu pane.</p>
Image log	Display setting	Invalid image (black image) is saved since image input/display through camera is unavailable.
Update	Sensor setting	Update does not work and an error message "This function is unavailable in the PC version." appears.
Retry details	Sensor setting	<p>Retry Function is unavailable.</p> <p>Confirmation and change of settings are available.</p>
Sensor monitor	Run Mode	Simulation of multiple sensors is unavailable.

\* For types or contents of setting data, refer to [4.6. Saving Data](#).

## 2.6.2. Restrictions of tabs

This section describes the restrictions of PC Tool (TouchFinder for PC) on FQ2 Simulator.

- Restrictions on the Image tab

Item	Sort	Description
------	------	-------------

Focus	Camera setup	The focus setting is always displayed as 0.
Image input mode	Camera setup	Change of the image input mode is not reflected to the displayed image. To reflect the change, image needs to be re-loaded.
Shutter speed	Camera setup	The set value cannot be reflected to the displayed image. The value itself can be displayed, changed, and saved.
Sensitivity	Camera setup	The set value cannot be reflected to the displayed image. The value itself can be displayed, changed, and saved.
Brightness correction	Camera setup	The set value cannot be reflected to the displayed image. The value itself can be displayed, changed, and saved.
White balance	Camera setup	The Auto button is unavailable. The value of R, G, and B other than the Auto button can be adjusted, changed, and saved.
Partial input	Camera setup	The set value cannot be reflected to the displayed image. The value itself can be displayed, changed, and saved.
Rotate 180	Camera setup	The rotation is not reflected to the displayed image. To reflect the rotation, image needs to be re-loaded.
Lighting control	Camera setup	The set value cannot be reflected to the displayed image. The value itself can be displayed, changed, and saved.
Trigger delay	Trigger setup	Trigger delay setting through inputting the <b>TRIG signal</b> is unavailable. Displaying images through inputting the <b>TRIG signal</b> is unavailable.  FQ2 Simulator can display, change, and save the trigger delay settings.

#### Restrictions on the Test tab

Item	Sort	Description
Continuous test.	Continuous test.	FQ2 Simulator executes an inspection and logging when the <b>Continuous test</b> button is clicked on the <b>Test</b> tab regardless of other settings.  Note that only inspection data is logged. Image data and statistical data cannot be logged.

#### Restrictions for the contents of the Tool button

Item	Sort	Description

Sensor information	Sensor setting	The displayed model is fixed. Model: FQ2-SXXX
Restart	Sensor setting	Restart does not work and an error message "This function is unavailable in the PC version." appears.

#### Restrictions on Run Mode

Item	Sort	Description
Switch Sensor	Tool button	Switch Sensor is unavailable.
Sensor list	Tool button	"Simulator" is displayed as a connected sensor.



#### Caution

- To use images on FQ2 Simulator, pre-save the images on an SD memory card and copy them to a folder at a specified location. To learn how to create a folder, refer to [Operation Procedure](#) in this manual.
- For information about measurement using image files by FQ2 Simulator, refer to [Measuring Images](#) in this manual.

#### 2.6.3. Other Things to Keep in Mind

- Data created by FQ2 Simulator occasionally cannot be loaded on an actual FQ2 sensor as the memory capacity differs between the FQ2 sensor and computer. If that happens, review settings and scenes of FQ2 Simulator and decrease the amount of necessary memory, and try loading the data again.
- Inspection results such as inspection errors or time on FQ2 Simulator may differ from those on the FQ2 sensor as the FQ2 sensor and computer use different CPUs. Make sure to confirm on the FQ2 sensor prior to use.
- When setting/adjusting inspection items on FQ2 Simulator, use image logs created on the actual FQ2 sensor to be used. Settings/adjustments may not be optimized if image logs from other sensor or other optical systems are used.

Make adjustments after loading images that are created on the actual FQ2 sensor for which the adjustments are to be made.

Settings/adjustments may not be optimized if image logs from other sensor with different color settings or resolution are used.

Differences of the color setting may cause an error for unregistered model, and the difference of the resolution may cause different setting range of inspection items from the FQ2 sensor.

### 3. Installation Procedure

FQ2 Simulator is free software for exclusive download for registered FQ2 Smart Camera series customers that can be downloaded from (XXX) by logging in with your SYSMAC ID. After the download, install it to your computer to start using it.



#### Useful information

SYSMAC ID is an ID issued for customers who purchased OMRON factory automation system machines.

To use customer-exclusive services, you need to login to the service page with your SYSMAC ID. If you already own a SYSMAC ID, you only need to register the purchased product to use services for the product.

#### 3.1. Download Procedure

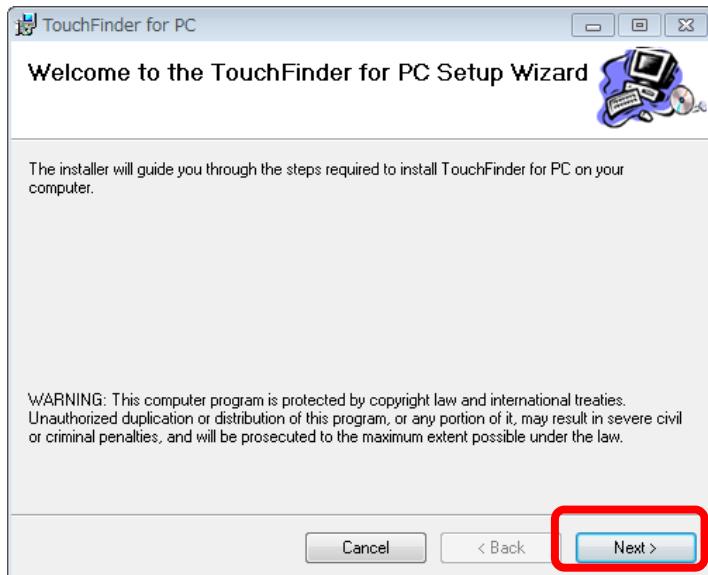
To download TouchFinder for PC, follow the below steps after successfully registering your SYSMAC ID online.

1. Visit [http://www.omron-cxone.com/vision\\_sys/](http://www.omron-cxone.com/vision_sys/).
2. Click **Login member page**.
3. Read through the *Software License Agreement*, and if you agree, click **Agree the terms and move to Login Screen**.
4. Select your country or region, and enter required information, and then click **Next..**
5. Click the latest version of the TouchFinder for PC file located under the *TouchFinder for PC* section.
6. Free download will start.

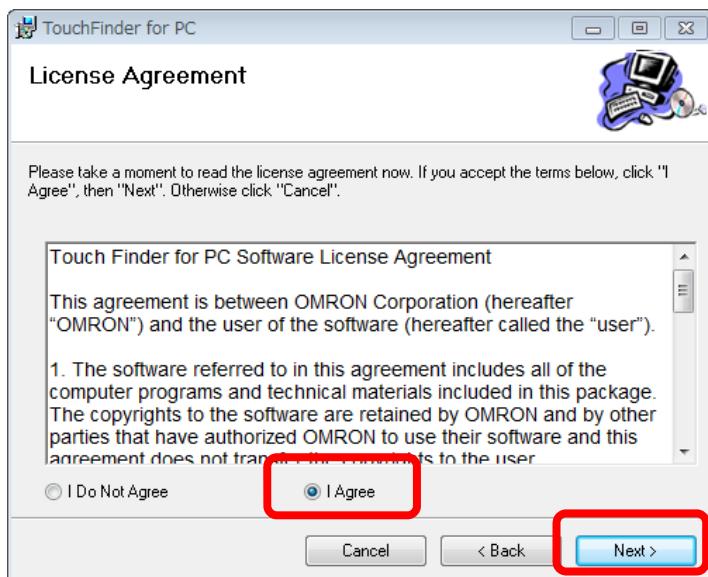
#### 3.2. Installation Procedure

After downloading TouchFinder for PC, install it to your computer.

1. First, unzip the downloaded file. Right-click the zip file to show the context menu, and click **Extract All....**
2. Then, an unzipped folder will be created on the desktop.  
Click the unzipped folder. Right-click **setup.exe**, and then click **Run as administrator**.
3. **TouchFinder for PC 2.0.0 Setup Wizard** opens automatically. Click **Next >**.



4. The window proceeds to the **License Agreement** dialog box. Scroll down and read through the contents. If you agree with the contents, select **I Agree**, and then click **Next >**.

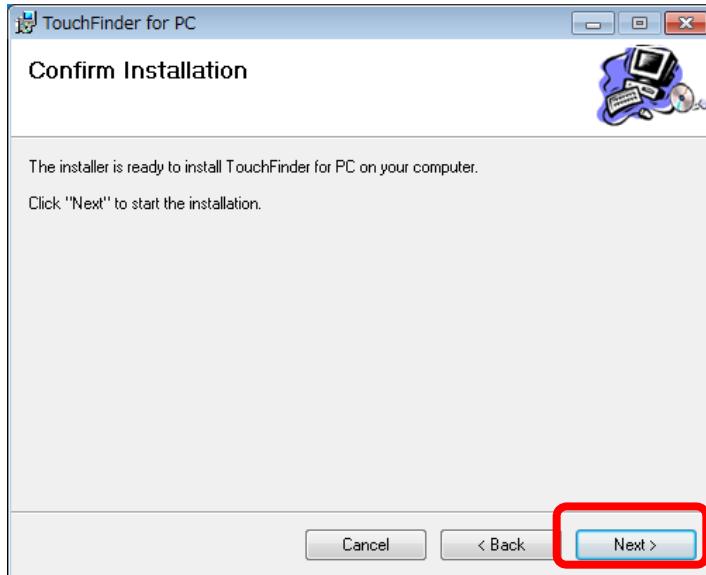


5. The window proceeds to the **Select Installation Folder** dialog box. Do not change the installation folder. Select the **Everyone** check box, and then click **Next >**.

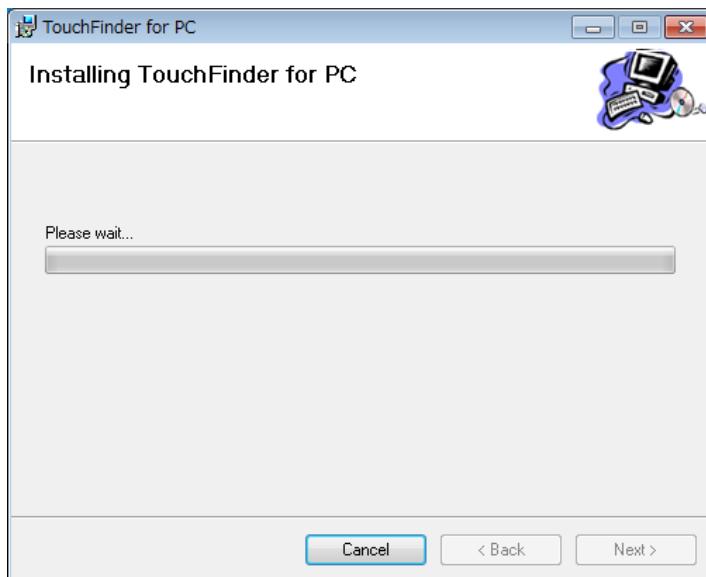


4. The **Confirm Installation** dialog box appears.

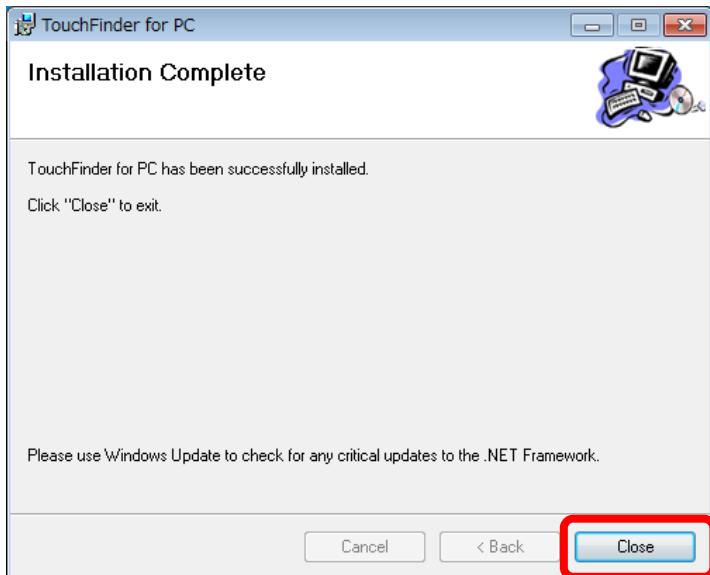
Click **Next >**.



5. Installation starts automatically.



6. When the installation is complete, a dialog to confirm the completion of the installation appears. Click **Close** to finish the installation.



7. Confirm that there is the **TouchFinder for PC** icon shown below on the desktop.



### 3.3. Troubleshooting

---

Issue	Remedy
At the startup of TouchFinder for PC, a message to request the installation of .NET Framework 3.5 appears.	<p>.NET Framework 3.5, which is part of the recommended system environment, is not installed on the same computer, or functions of .NET Framework 3.5 are not validated.</p> <p>Install .NET Framework 3.5 or validate the functions according to the configuration of your computer.</p> <p>If the computer is connected to internet,</p> <ul style="list-style-type: none"><li>▪ Install .NET Framework 3.5 by following the displayed messages.</li><li>▪ Or, click <b>Turn Windows features on or off</b> on the control panel, and select the <b>.NET Framework 3.5 (.NET 2.0/3.0)</b> check box.</li></ul> <p>If the computer is not connected to internet,</p> <ul style="list-style-type: none"><li>▪ Provide the installation media of Windows. Execute command prompt as administrator. Enter the following command. <code>Dism /online /enable-feature /featurename:NetFx3 /All/Source:&lt;Drive name&gt;:\sources\sxs /LimitAccess</code></li></ul> <p>Related page on the Microsoft website: <a href="https://msdn.microsoft.com/en-us/library/hh506443%28v=vs.110%29.aspx">https://msdn.microsoft.com/en-us/library/hh506443%28v=vs.110%29.aspx</a></p>
At the installation of TouchFinder for PC, a message to request the installation of Visual C++ Runtime Library appears.	Visual C++ Runtime Library, which is required for FQ2 Simulator to run, is not installed on the same computer. Install Visual C++ Runtime Library by following the displayed messages.

## 4. Operation Procedure

This section describes the operation procedure of FQ2 Simulator.

### 4.1. How to Start FQ2 Simulator

This section describes how you can start FQ2 Simulator.

1. Double-click the **TouchFinder for PC** icon.

2. The startup menu window opens.

Confirm the version of TouchFinder for PC. The sample image shown below uses Ver.2.00.

Click the image under **Start up the simulator (offline)**.



#### Caution

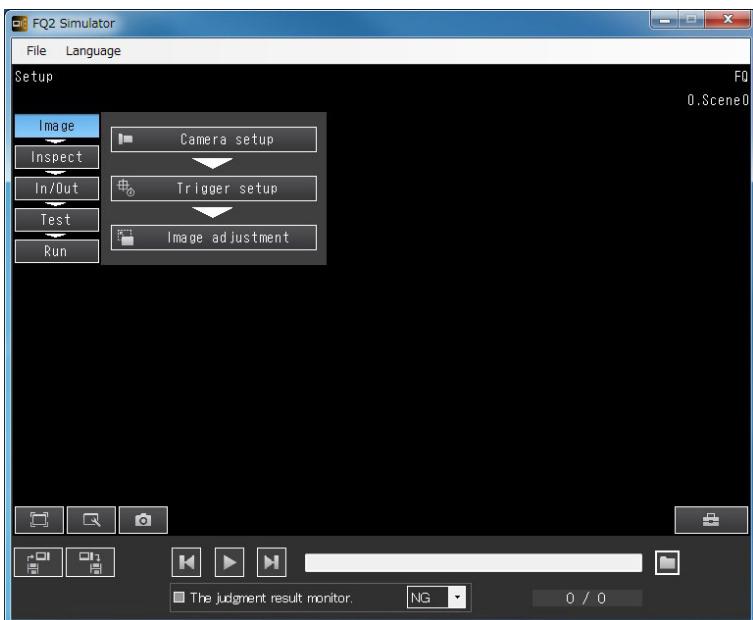
At the first startup of TouchFinder for PC, installation of .NET Framework 3.5 is occasionally requested. If that happens, refer to [At the startup of TouchFinder for PC, a message to request the installation of .NET Framework 3.5 appears.](#) in "3.3. Troubleshooting" in this manual.

- Match the version of FQ2 Simulator and the FQ2 sensor to be configured. For more details about restrictions, refer to [2.6. Restrictions](#) in this manual.

3. The splash screen for the simulator appears.



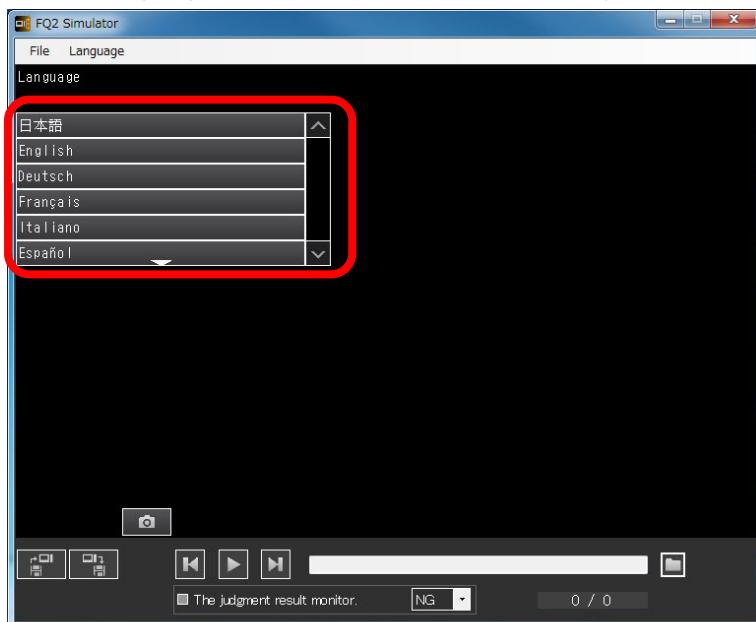
4. The window automatically switches to **Setup Mode** of the simulator..  
If you are starting FQ2 Simulator for the first time, proceed to 5.



5. At the first startup of FQ2 Simulator, after the simulator startup window appears, you will be automatically directed to the **Language** window of **TouchFinder display**.

On the **Language** window, the available languages are shown in a drop-down list.

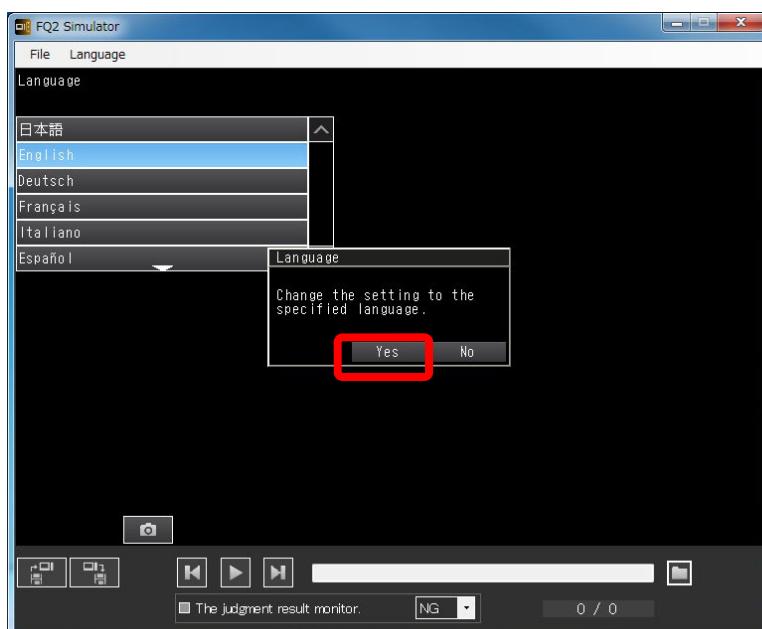
Click a language to use on **TouchFinder display**.



Menu content	Description
Language	The available languages for TouchFinder display are as follows: Japanese, English, German, French, Italian, Spanish, Chinese (traditional), Chinese (simplified), Korean.

6. The **Language** dialog box appears.

Click **Yes**.



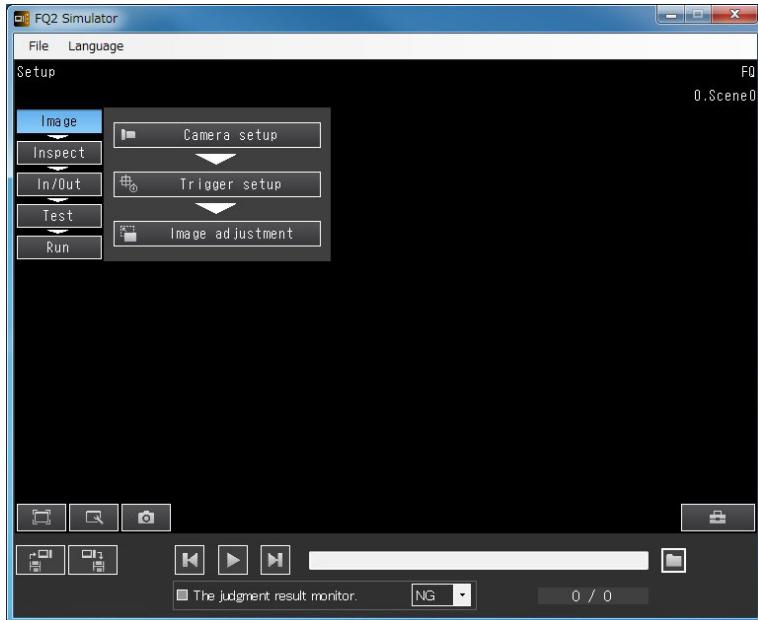


## Caution

On the Language window shown at the first startup, you can only change the language for the **TouchFinder display**.

For information about changing language for the simulator, refer to [4.2.1. Menu bar](#) in this manual.

7. The window automatically switches to **Setup Mode** of the simulator.

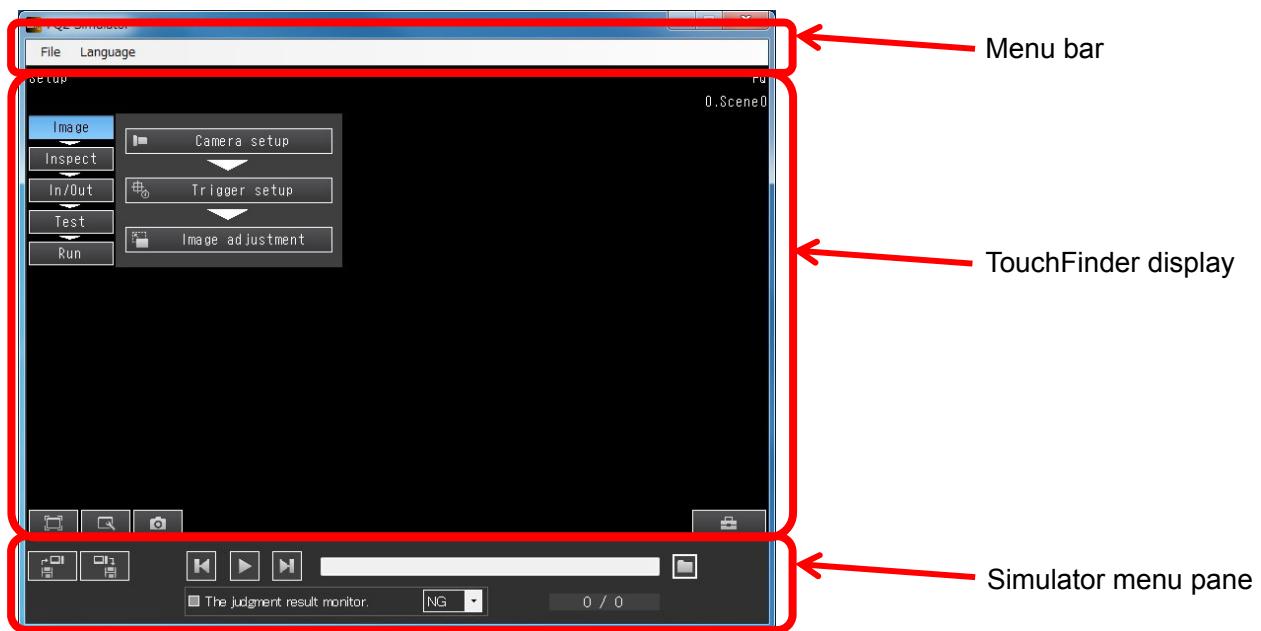


## Caution

On FQ2 Simulator, **Setup Mode** starts even though no inspection item is registered.

## 4.2. Screen of FQ2 Simulator

This section describes the structure of the simulator screen. The simulator screen consists of three elements: **Menu bar**, **TouchFinder display**, and **Simulator menu pane**.



### 4.2.1. Menu bar

You can change the language or exit FQ2 Simulator.

Main menu	Sub menu	Description
File	Connect to the sensor (online).	Exits FQ2 Simulator and switches to PC Tool (TouchFinder for PC).
	End	Exits FQ2 Simulator.
Language	Language setting	Changes the language setting of FQ2 Simulator. The available languages for FQ2 Simulator are as follows: Japanese, English, German, French, Italian, Spanish, Chinese (traditional), Chinese (simplified), Korean.



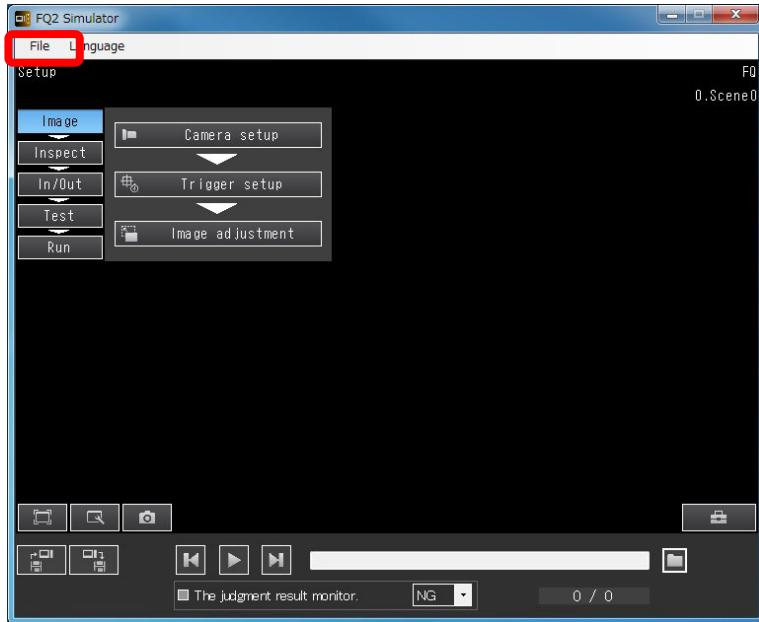
#### Caution

You can change the language only for **Simulator menu pane** and **Menu bar** under the language setting. To change the language for PC Tool (TouchFinder for PC), click the tool button, select TF settings, and then select the language from the drop-down list. For more details about changing the language, refer to "Switching the Display Language" in "7-12 Functions Related to the System" in *Smart Camera FQ2-S/CH Series User's Manual*: Cat. No. Z337.

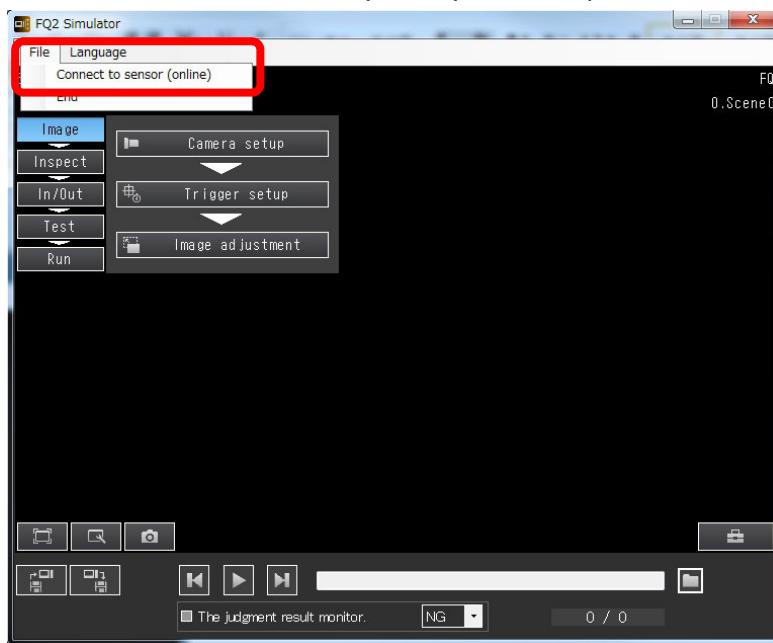
- Connect to sensor (online)

You can switch to PC Tool (TouchFinder for PC) by following the below procedure.

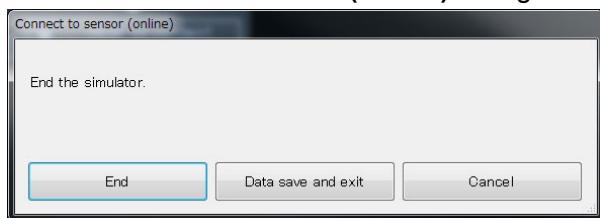
1. Click **File** on Menu bar.



2. Click **Connect to sensor (online)** in the drop-down menu.



3. The **Connect to sensor (online)** dialog box appears.



Elements	Description
End button	Exits FQ2 Simulator and switch to PC Tool (TouchFinder for PC).
Data save and exit button	Saves the whole setting data created on FQ2 Simulator (*1). Then, FQ2 Simulator closes and PC Tool (TouchFinder for PC) opens.  The setting data will be saved in the following destination. C:\Users\User name\Documents\OMRONFQ\SDCard\SettingData\FQ2-S_Simxxx (*2) .
Cancel button	The Connect to sensor (online) dialog box closes while FQ2 Simulator stays open.

\*1 The whole setting data here includes the scene group data, sensor system data, calibration group, and dictionary data.

\*2 xxx as in FQ2-S\_Simxxx is the version number of FQ2 Simulator.

#### 4. Click **End** or **Data save and exit**.

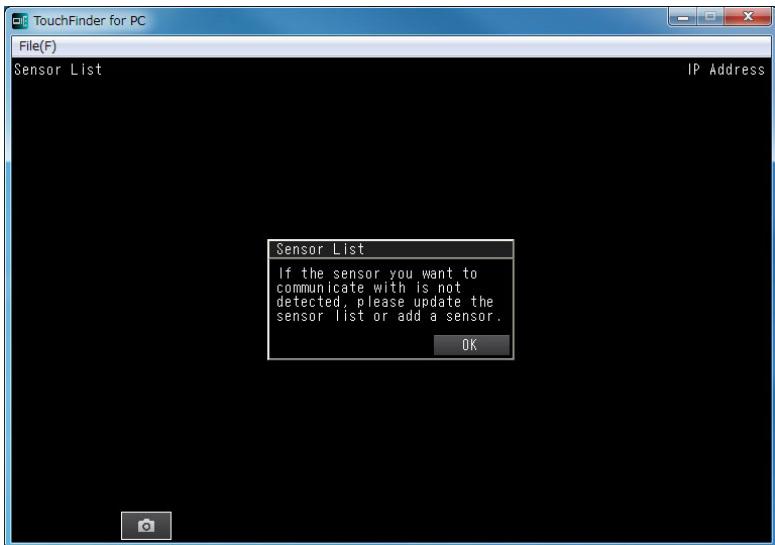
Then, FQ2 Simulator will close.



#### 5. The splash screen for PC Tool (TouchFinder for PC) appears.



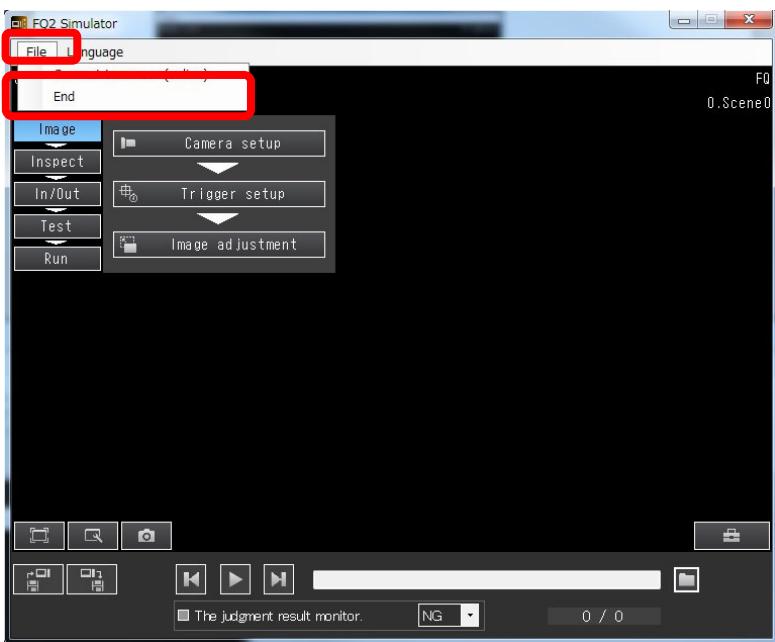
6. Then, TouchFinder for PC starts.



- Exit

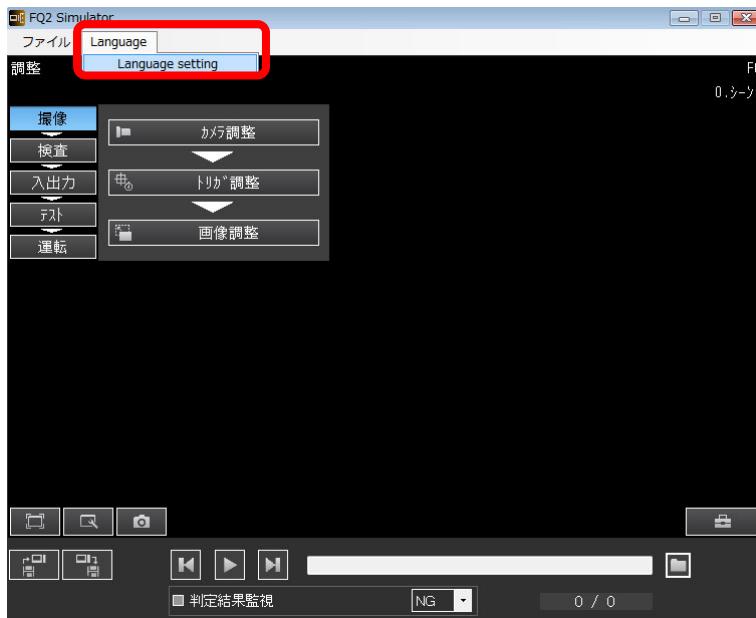
On **Menu bar**, click **File**, and then click **End**.

For more information, refer to [4.8. How to Exit FQ2 Simulator](#).



- Language settings

1. On **Menu bar**, click **Language**, and then click **Language setting**.



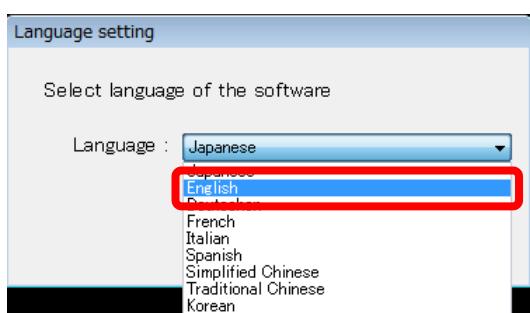
2. The **Language setting** dialog box appears.

Click the downarrow button.



3. Available languages for FQ2 Simulator are shown.

Point to, and click a language to use on FQ2 Simulator.

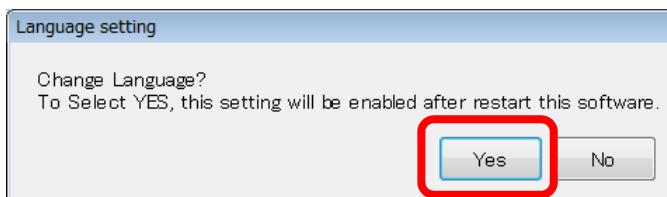


4. Click **OK**.



5. The **Language setting** dialog box appears.

Click **Yes**.



6. On **Menu bar**, click **File**, and then click **End**.

Then you will automatically exit TouchFinder for PC to reflect the new language setting.

7. Start TouchFinder for PC. Then, the new language setting is applied.

#### 4.2.2. TouchFinder display

TouchFinder display of FQ2 Simulator is the same as TouchFinder display of PC Tool (TouchFinder for PC).



##### Caution

For restrictions of FQ2 Simulator, refer to [2.6. Restrictions](#) in this manual.



##### Reference

For information about how to use **TouchFinder display**, refer to *Smart Camera FQ2-S/CH Series User's Manual*: Cat. No. Z337, and *Smart Camera FQ2-S/CH Series User's Manual for Communications Settings*: Cat. No. Z338.

#### 4.2.3. Simulator menu pane

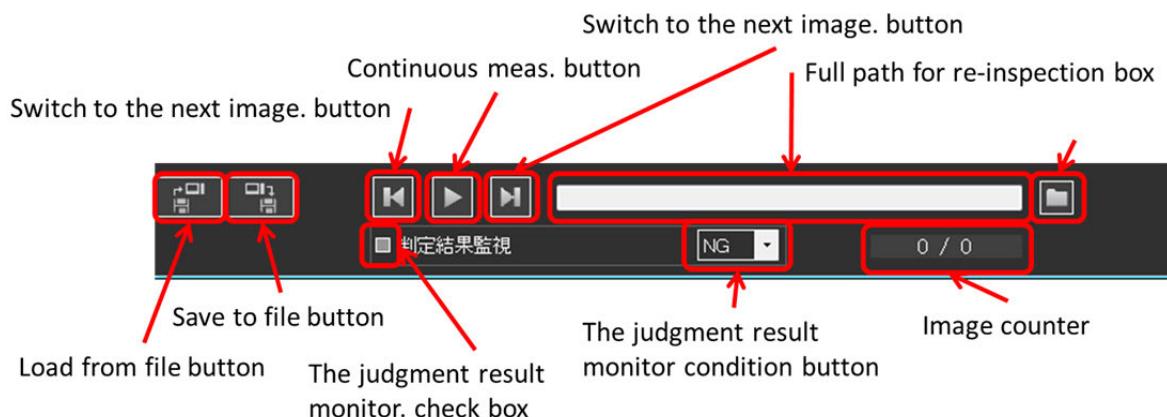
**Simulator menu pane** of FQ2 Simulator has the following functions.

Loading/saving scene data and sensor system data.

Selecting image data.

Inspecting selected image data.

Monitoring the judgment results.



Name	Description
Load from file button	Loads setting data including the scene data and system data to FQ2 Simulator.
Save to file button	Saves the scene data and system data that have been modified by FQ2 Simulator.
Switch to the next image. button at left	Inspects one image before the currently selected image.
Continuous meas. button	The appearance of the Continuous meas. button changes during a continuous measurement and when it is stopped.  During standby: ; During a continuous measurement:  : Executes a continuous measurement for all images in the same folder in which the selected image is located (*). The inspection stops once all images have been inspected.  : Stops the current measurement.
Switches to the next image. button at right	Inspects one image after the currently selected image.
Full path for re-inspection box	Displays the image file name and its path to re-inspect.

Select the image. button	Specifies the image file to re-inspect.
The judgment result monitor. check box	If this check box is selected, the judgment results are monitored during continuous measurements.
The judgment result monitor condition button	Drop-down list to select the condition to monitor the judgment results.
Image counter	<p>Displays the current count of images and the total number of images in the folder in which the specified image is located (*).</p> <p>Images in the folder are sorted in ascending order by the file names, and numbered in the order starting from the first image with 1.</p>

\* Only images in the directly specified folder are counted. Those in subfolders are not counted.



### Caution

**Simulator menu pane** is enabled only on **Setup Mode**. It is disabled on **Run Mode**.

The **Load from file** button and **Save to file** button are only valid for data about the sensor.

The setting data of **TouchFinder** is not supported.

During a continuous measurement, the only available button is the **Continuous meas.** button. Other buttons are unavailable including those on **TouchFinder display**.

## 4.3. Loading Measurement Images

This section describes the procedure to specify images to inspect on FQ2 Simulator.

If you want to inspect images taken by a digital camera or image data saved by FQ2 Smart Camera series, save them in a folder on your computer. Here is a recommended procedure.



### Caution

When setting/adjusting inspection items on FQ2 Simulator, use image logs created on the actual FQ2 sensor to be used. Settings/adjustments may not be optimized if image logs from other sensor with different color settings or resolution are used.

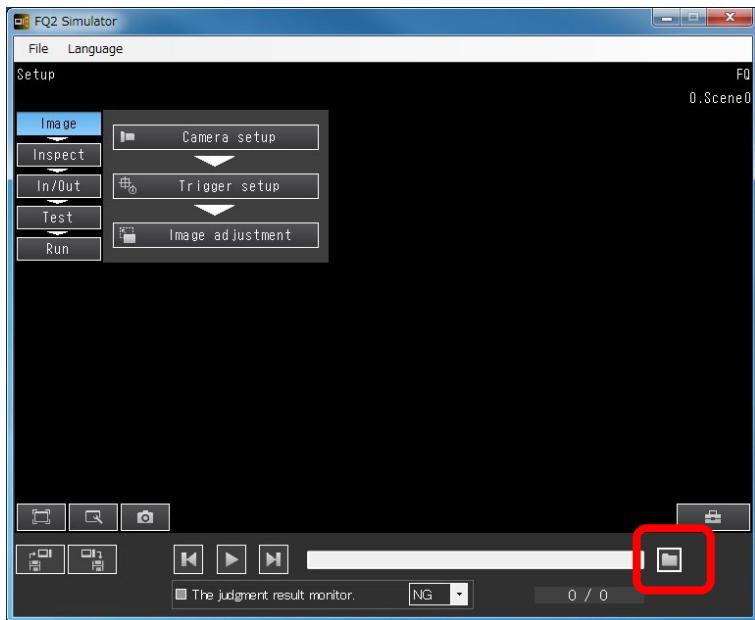
Differences of the color setting may cause an error for unregistered model, and the difference of the resolution may cause different setting range of inspection items from the FQ2 sensor.

1. When you install FQ2 Simulator, the OMRON FQ folder is automatically created in Documents. Save images for inspection in the SDCard folder in the OMRON FQ folder. You can create a subfolder in the SDCard folder, if you want.

C:\Users\User name\Documents\OMRON FQ\SDCard

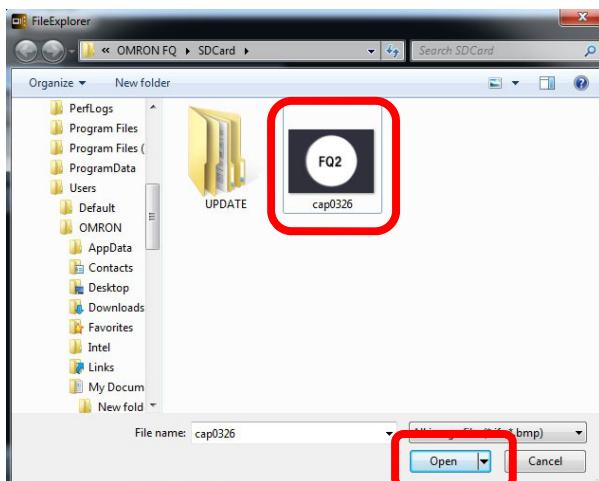
2. Start FQ2 Simulator.

3. Click the **Select the image.** button on **Simulator** menu pane.



4. The **FileExplorer** dialog box appears.

Select the image to inspect, and click **Open**.



5. In the Full path for re-measurement box on **Simulator menu pane**, the full path of the selected image is shown right justified.



### Caution

The inspection is executed when an image file is selected and loaded on to FQ2 Simulator.



### 4.4. Setting Inspection Items

This section describes the procedure to add or edit inspection items using the **Search** inspection item as an example.



### Caution

- Data created by FQ2 Simulator may not be loaded on an actual FQ2 sensor as the memory capacity differs between the FQ2 sensor and computer. If that happens, review settings and scenes on FQ2 Simulator and decrease the amount of necessary memory, and try loading the data again.
- Inspection results such as the inspection error or inspection time may differ between FQ2 Simulator and the FQ2 sensor as the FQ2 sensor and computer use different CPUs. Make sure to confirm on the FQ2 sensor prior to use.



### Reference

For more detailed procedures to set up inspection items, refer to *Smart Camera FQ2-S/CH Series User's Manual: Cat. No. Z337*.

- Adding inspection items

1. Start FQ2 Simulator and go to **Setup Mode**. Load images by referring to [4.3. Loading Measurement Images](#) in this manual.



### Caution

- When setting/adjusting inspection items on FQ2 Simulator, use image logs created on the actual FQ2 sensor to be used. Settings/adjustments may not be optimized if image logs from other sensor with different color settings or resolution are used.
- Differences of the color setting may cause an error for unregistered model, and the difference of the resolution may cause different setting ranges of inspection items from the FQ2 sensor.

2. Click the **Inspect** tab.

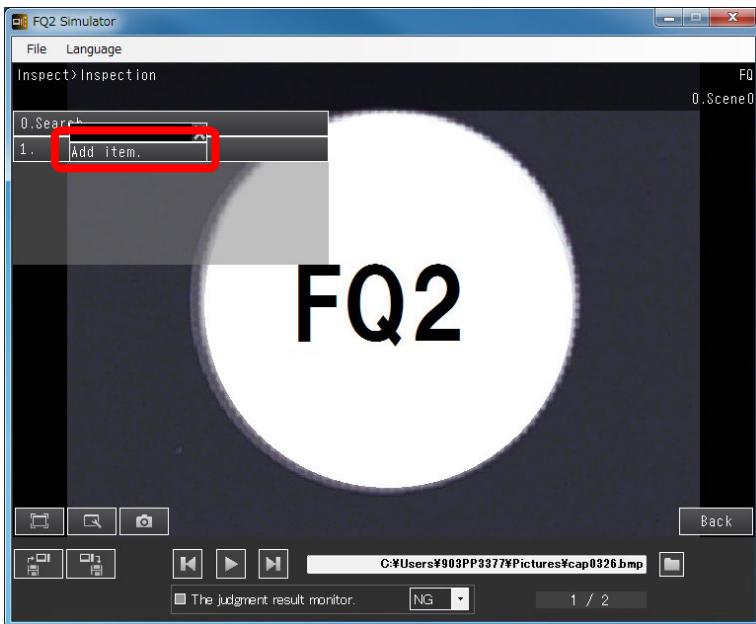


3. Click **Inspection**.

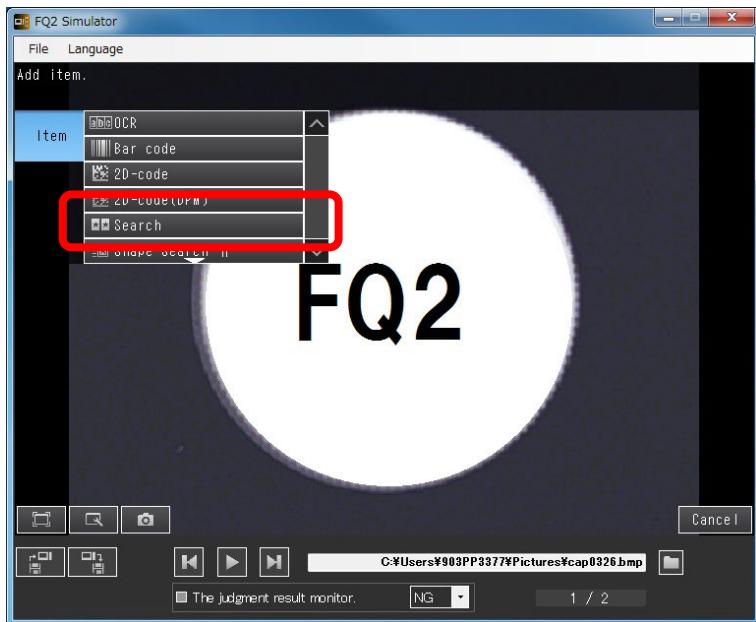


4. On the **Inspect > Inspection** window, click an empty inspection item number.

5. Click **Add item**.



6. You are directed to the **Add item.** window, and available inspection items are listed in a drop-down list box. Click **Search**. The **Search** inspection item is registered.



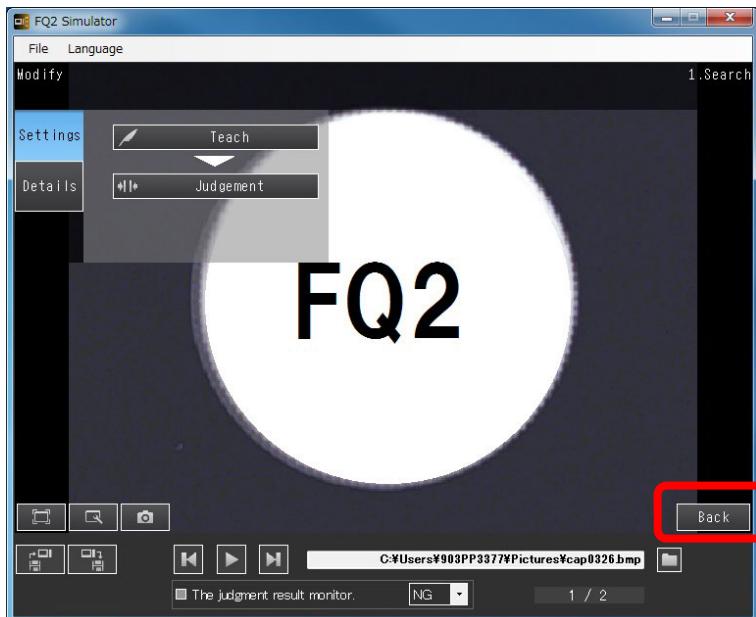
### Useful information

Inspection items are listed in a drop-down list box. If there is ▲ mark on the top of the list, or ▼ mark on the bottom of the list, there are more inspection items further on the list. Click ▲ or ▼ marks to show the hidden inspection items.

7. On the **Modify** window, adjust parameters.

Adjust settings on both the **Settings** tab and **Details** tab.

After completing the settings, click **Back**.

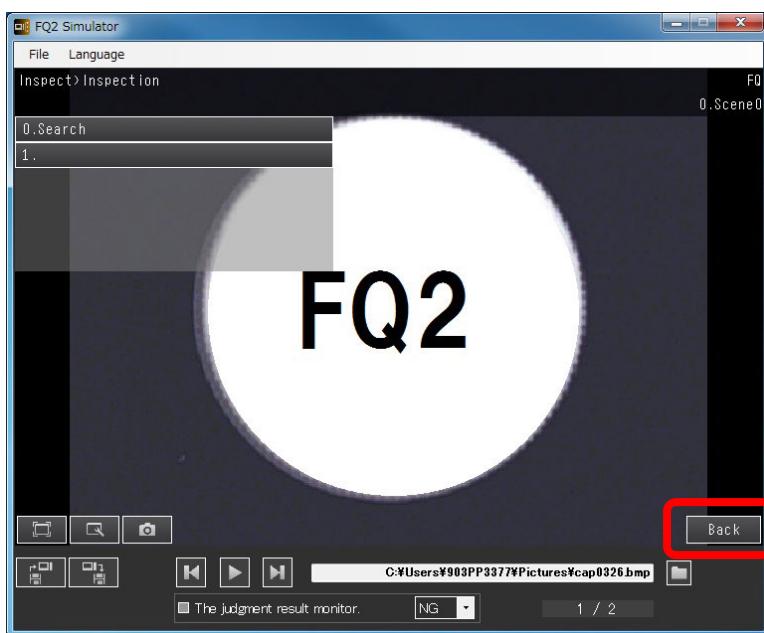


## Reference

For more detailed procedures to set up the **Search** inspection item, refer to "4-8 Inspecting with the Search Inspection Item" in *Smart Camera FQ2-S/CH Series User's Manual*: Cat. No. Z337.

8. If you want to add more inspection items, repeat the step 4 to 7.

If you want to finish the setting, click **Back**.



9. For more information, refer to [4.6. Saving Data](#) in this manual. Save the modified settings.



### Caution

- Data created by FQ2 Simulator may not be loaded on an actual FQ2 sensor as the memory capacity differs between the FQ2 sensor and computer. If that happens, review settings and scenes on FQ2 Simulator and decrease the amount of necessary memory, and try loading the data again.
- Inspection results such as the inspection error or inspection time may differ between FQ2 Simulator and the FQ2 sensor as the FQ2 sensor and computer use different CPUs. Make sure to confirm on the FQ2 sensor prior to use.

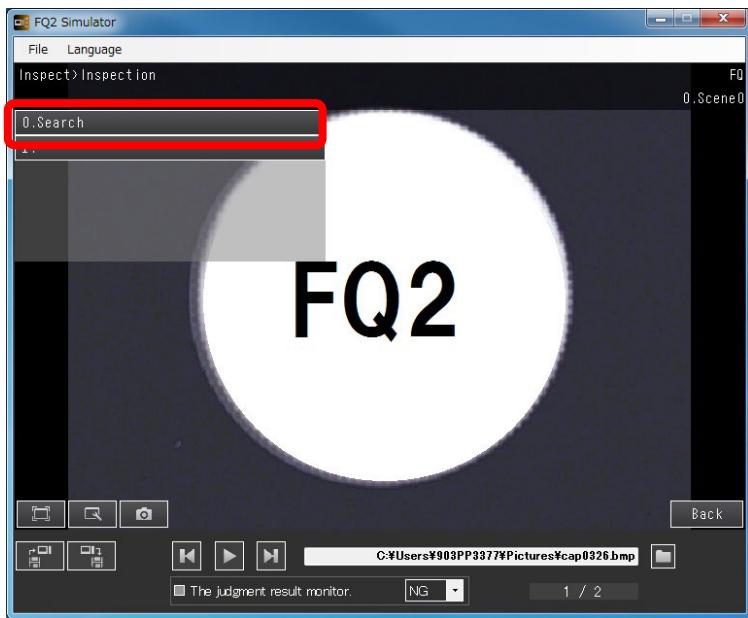
- To adjust the settings of inspection items

1. If you want to adjust the settings of an already set inspection item, click the **Inspect** tab on **Setup Mode**, and then click **Inspection**.

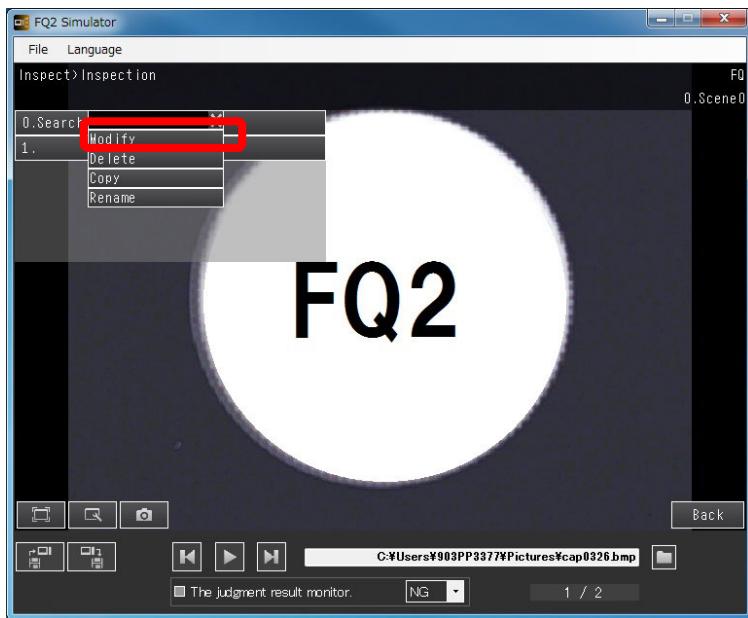


2. The **Inspect> Inspection** window appears.

Click the inspection item to modify the setting.



3. Then a drop-down list appears. Click **Modify**.



### Useful information

If you want to delete an inspection item, follow the procedure 3. Then select **Delete** from the drop-down list. The **Delete** dialog box appears. Click **Yes** to delete the item.

4. On the **Modify** window, set up parameters.

Adjust settings on both the **Settings** tab and **Details** tab.

After completing the settings, click **Back**.



5. The modified settings are saved.

For more information, refer to [4.6. Saving Data](#) in this manual.



## Reference

For more detailed procedures to set up inspection items, refer to *Smart Camera FQ2-S/CH Series User's Manual*: Cat. No. Z337".

## 4.5. Measuring Images

This section describes the procedure to inspect specified images.

To inspect images, save images in a specified folder, select them on FQ2 Simulator. Following that procedure, this section focuses on "● To load images to inspect", "● Continuous measurement", "● To monitor the judgment results", "● Single inspection", and "● Logging setting".



### Caution

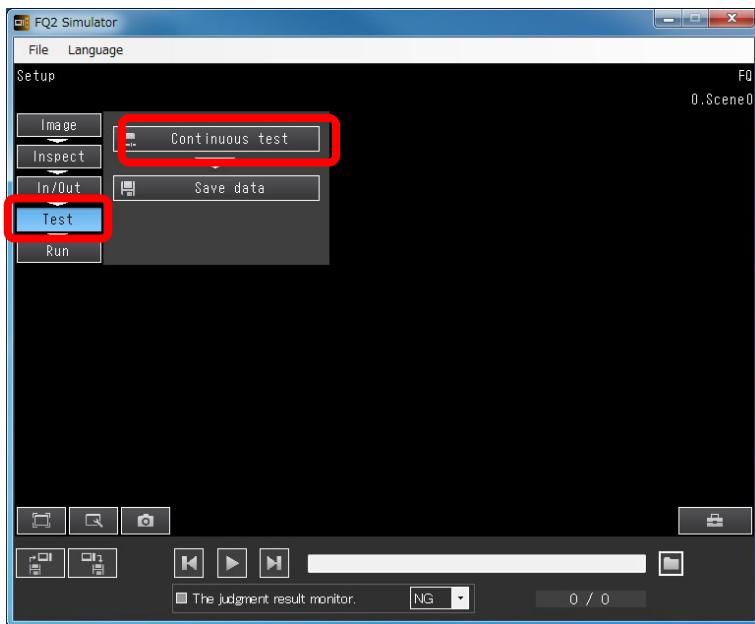
- When setting/adjusting inspection items on FQ2 Simulator, use image logs created on the actual FQ2 sensor to be used. Settings/adjustments may not be optimized if image logs from other sensor or other optical systems are used.
- Inspection results such as error or time on FQ2 Simulator may differ from those on the FQ2 sensor because the FQ2 sensor and computer use different CPUs. Make sure to confirm on the FQ2 sensor prior to use.

To load images to inspect

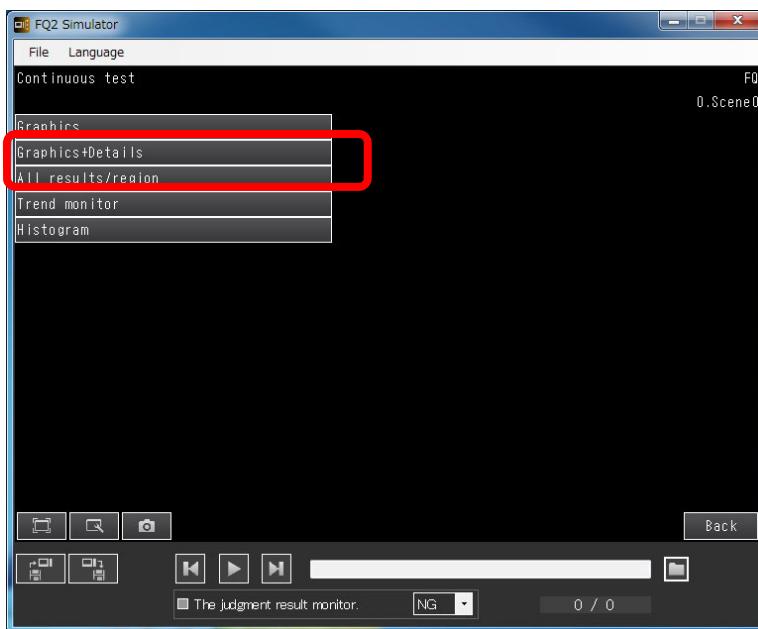
Refer to [4.3. Loading Measurement Images](#) in this manual and follow the instruction to load images to use for inspections.

- To select images on FQ2 Simulator

1. Start FQ2 Simulator and go to **Setup Mode**.
2. Refer to [4.7. Loading Data](#) in this manual and follow the instruction to load inspection items that you set up.
3. Click the **Test** tab, and then click **Continuous test**.



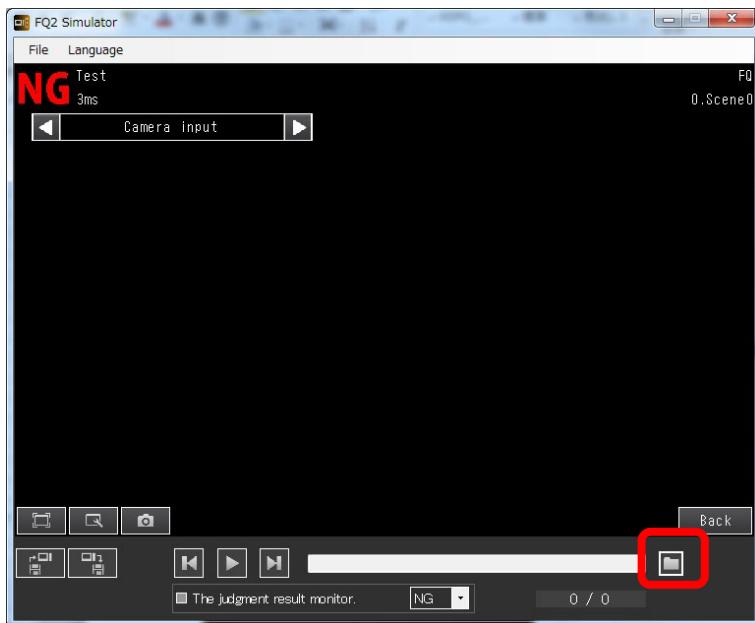
4. The **Continuous test** window is displayed.  
Click **Graphics+Details** for example.



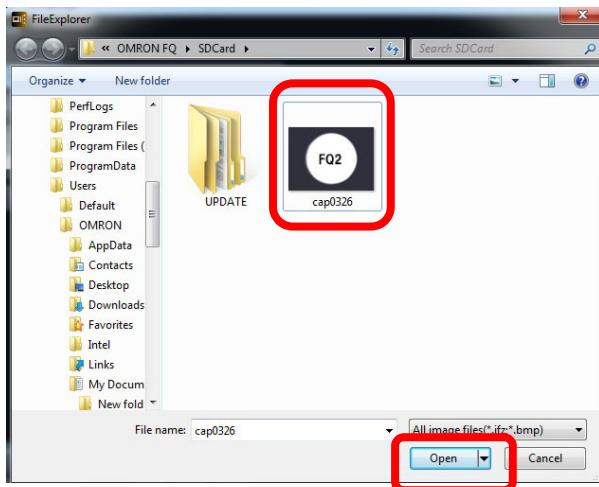
5. The **Graphics+Details** display is displayed.

Since no image is loaded yet, it turns NG.

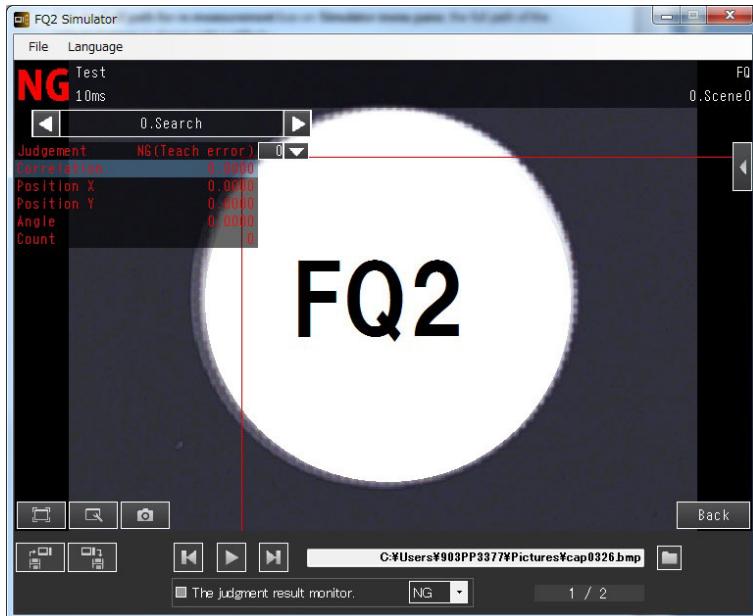
Click **Select the image.** on **Simulator menu pane.**



6. The **FileExplorer** dialog box appears. Select the image to inspect, and click **Open**.



7. In the **Full path for re-measurement** box on **Simulator menu pane**, the full path of the selected image is shown right justified.



### Caution

The inspection is executed when an image file is selected and loaded on to FQ2 Simulator. Therefore, the results are displayed on the **All results/region** window.

- Continuous measurement

1. Click the **Continuous meas.** button on **Simulator menu pane**.



2. Then, inspection is executed for all images in the same folder in which the selected image is located. The **Continuous meas.** button changes and the displayed count of images in Image counter increases per inspection.



### Caution

- If you want to stop continuous measurements in the middle, click the **Continuous meas.** button.
- During a continuous measurement, the only available button is the **Continuous meas.** button. Other buttons are unavailable including those on TouchFinder display. Inspections are executed only for images in the directly specified folder, but not those in sub-

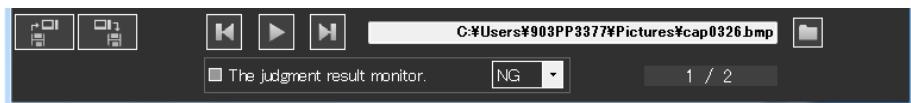
folders.



## Useful information

- Images in the folder are sorted in ascending order by the file names,
- Inspection is executed in ascending order starting from the selected image. When the inspection is complete through the last image in the folder, it continues from the first image and inspect all images in the folder.

3. The inspection will stop once all images have been inspected.



- To monitor the judgment results

Continuous measurement will not be interrupted until all images have been inspected regardless of the overall judgment result. If you want to confirm the details of image files with a certain overall judgment, use the **judgment result monitor** function.

1. To use the judgment result monitor function, select the **The judgment result monitor** check box.

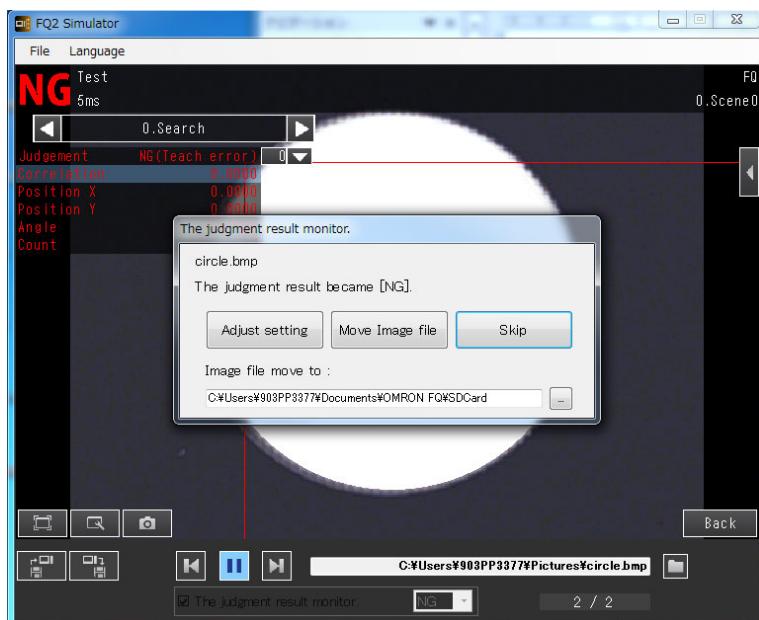


2. Click the The judgment result monitor condition button, and select **NG** or **OK** from the drop-down list.



3. Click the **Continuous meas.** button on **Simulator menu pane** to start inspection.

If the overall judgment result matches the judgment result condition, the **The judgment result monitor** dialog box appears.



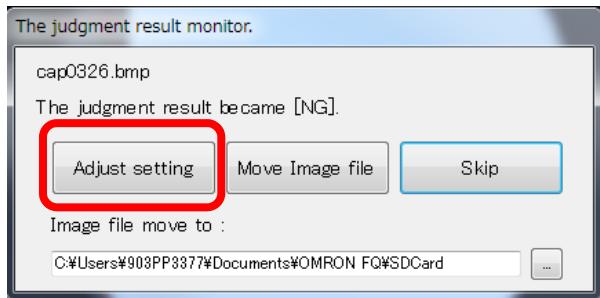
Elements	Description
Adjust setting button	Stops the continuous measurement and the The judgment result monitor dialog box disappears.
Move Image file button	Moves images on which the overall judgment matched the judgment result monitor condition to the destination specified in the Image file move to : box. The inspection is continued after moving the image .
Skip button	The inspection is continued without any processing.
Image file move to : box	Shows the full path of image on which the overall judgment matched the judgment result monitor condition.
 Folder browse button	Specifies the path in the Image file move to : box. When this is clicked, a browsing screen on which you can browse and select the destination folder appears. The default destination path is as shown below: C:\Users\User name\Documents\OMRON FQ\SDCard .



### Caution

Select a different folder from the folder specified by the **Select the image**. button. If the same folder is selected, files won't be moved.

4. Click the **Adjust setting** button to stop the inspection, and adjust inspection items and/or the judgment conditions.



5. Save the modified settings by referring to [4.6. Saving Data](#) in this manual.



## Reference

For more detailed procedures to set up/adjust inspection items, refer to *Smart Camera FQ2-S/CH Series User's Manual*: Cat. No. Z337.

- Single inspection

Click either of the **Switch to the next image.** buttons on **Simulator menu pane**.



## Useful information

- Inspections are executed only for images in the directly specified folder, but not those in subfolders.
- Images in the folder are sorted in ascending order by filename.
- **Switch to the next image.** button at left inspects one image before the currently selected image. If the displayed image is the first image in the folder, the last image in the folder is selected and inspected.
- **Switch to the next image.** button at right inspects one image after the currently selected image. If the displayed image is the last image in the folder, the first image in the folder is selected and inspected.

- Logging setting

**Simulator menu pane** is enabled only on **Setup Mode**. It is disabled on **Run Mode**.

Therefore, FQ2 Simulator executes an inspection and logging at the following times to confirm the adjusted settings regardless of the logging settings.

1. When image data is loaded
2. When a continuous measurement started.
3. When an inspection is executed during a continuous measurement test mode.

Note that only the inspection data will be logged. Image data and Statistical data cannot be logged.

## 4.6. Saving Data

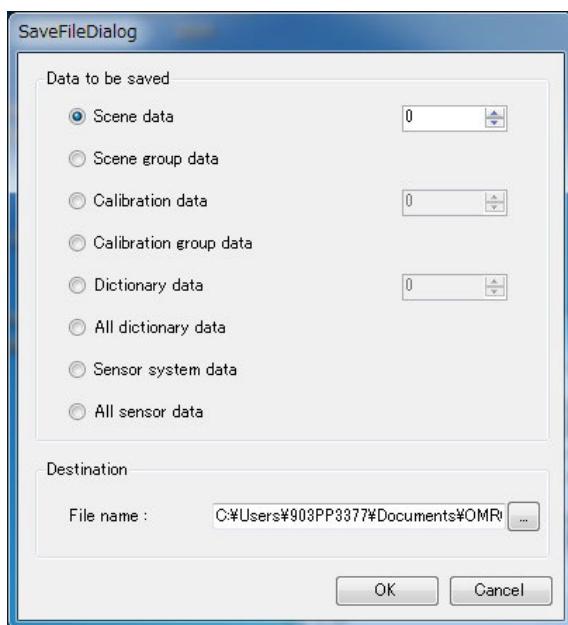
This section describes the procedure to save data after adjusting inspection items, etc.

1. Stop inspection.

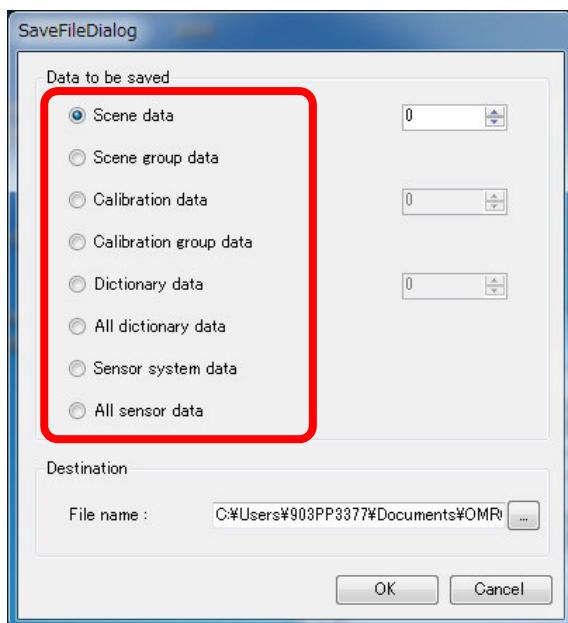
Stop inspection and click the **Save to file** button on **Simulator menu pane**.



2. The **SaveFileDialog** dialog box appears.



3. Select a check box for desired data under the **Data to be saved** section.  
Some data requires additional information.



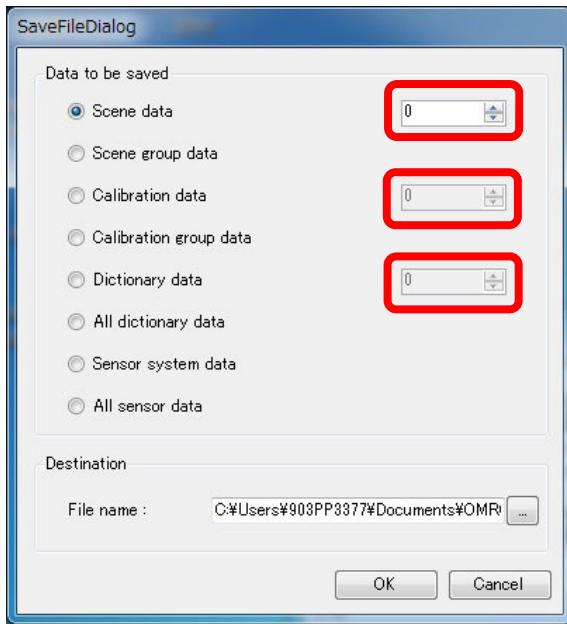
Data	Description
Scene data	The following information about respective scenes. Settings of inspection items The sort order of inspection items This requires entering the scene number.
Scene group data	Information about all the scene data.
Calibration data	Calibration data for the entered calibration number. This requires entering the calibration data number.
Calibration group data	Information about all the calibration data
Dictionary data	Dictionary data for the entered dictionary number. This requires entering the dictionary data number.
All dictionary data	Information about all the dictionary data.
Sensor system data	Information about the system data in the sensor. The system data is common data of all scenes.
All sensor data	The whole setting data including the scene group data, sensor system data, calibration group, and dictionary data.



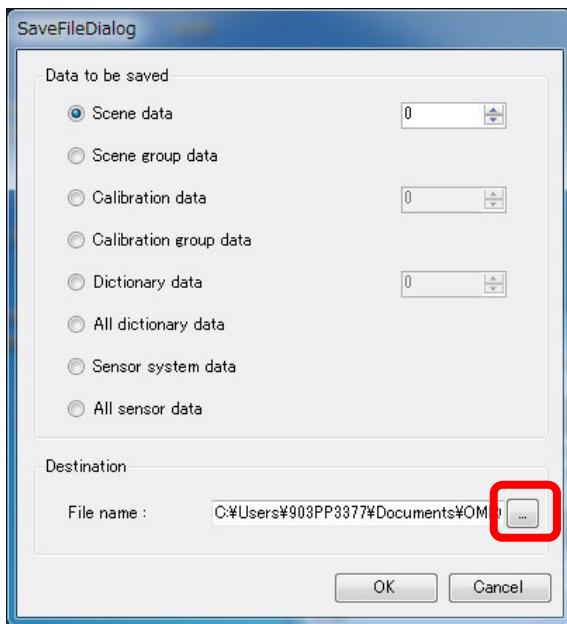
## Reference

For more information about the data listed above, refer to "7-7 Saving Sensor Settings" in *Smart Camera FQ2-S/CH Series User's Manual*: Cat. No. Z337.

4. For data that requires additional information, enter a value by clicking the up/down arrows on the spin boxes located at the right side of the options, or by typing the value from the key board.

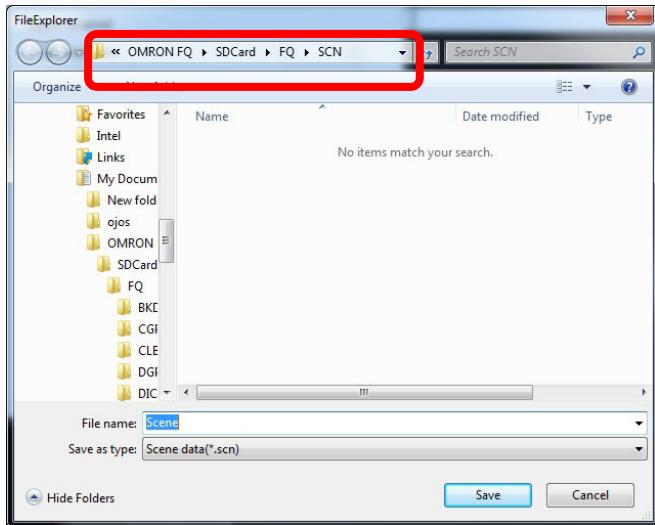


5. Under the **Destination** section, click the **Select destination** button.

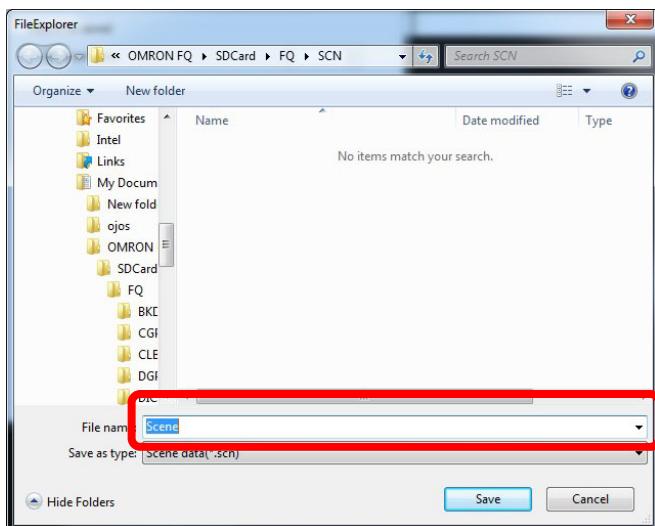


6. The **FileExplorer** dialog box appears.

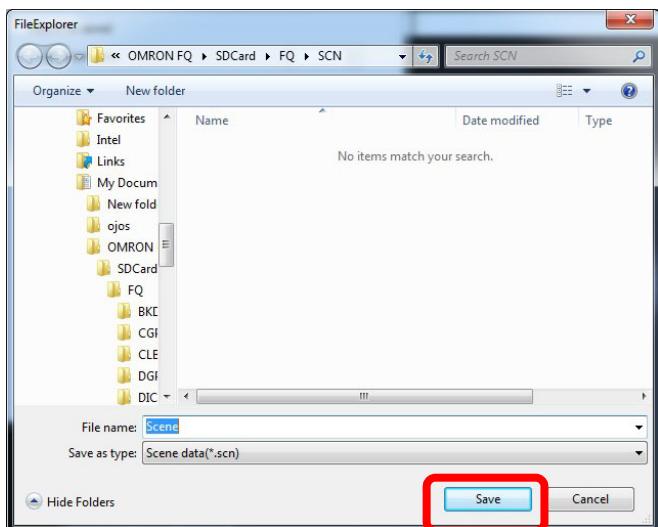
Specify the destination path for the saving data.



7. Enter a name you want for the saving data.



8. Click **Save**. Data has not been saved yet at this point.



### Caution

You can only use alpha numeric characters for the filename.

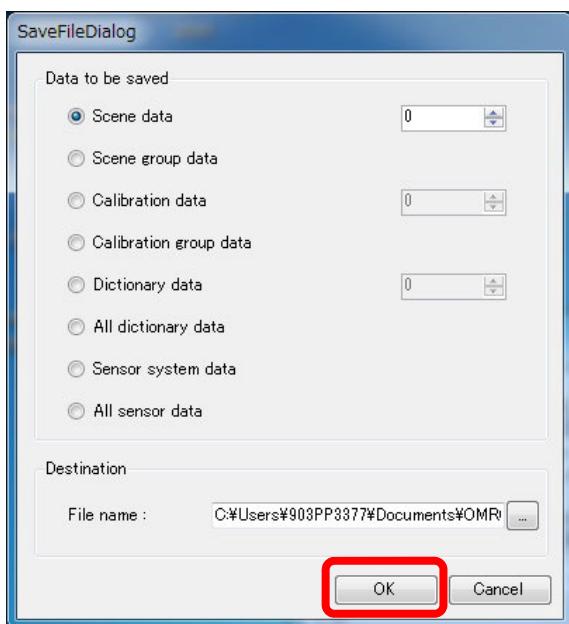


### Useful information

The recommended length of the filename is 36 characters or less.

6. Click **OK** on the **SaveFileDialog** dialog box.

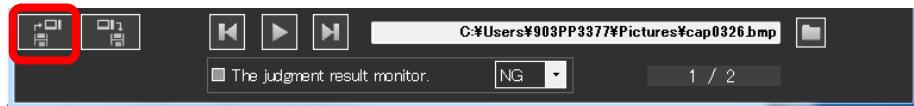
Data is saved.



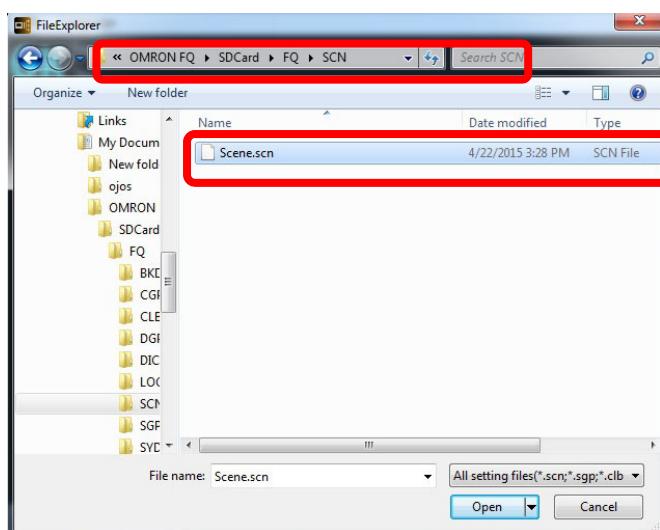
## 4.7. Loading data

This section describes the procedure of loading data from the FQ2 sensor to FQ2 Simulator.

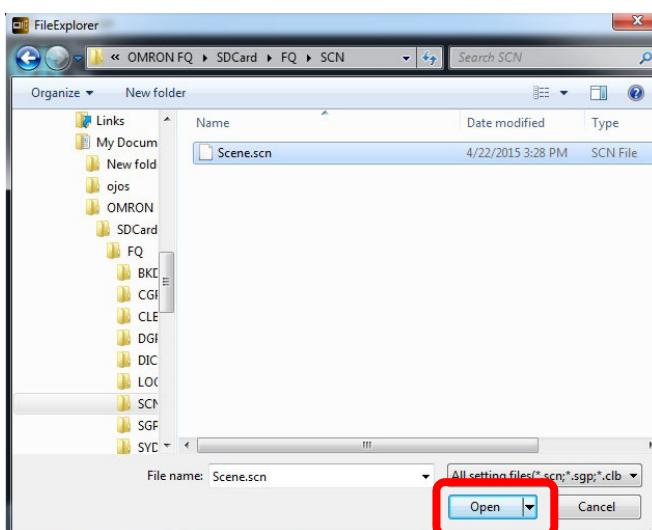
1. Stop inspection.
2. On **Simulator menu pane**, click the **Load from file** button.



2. The **FileExplorer** dialog box appears.  
Select the setting data to load.



3. Click **Open**.  
The selected setting data is loaded to FQ2 Simulator.



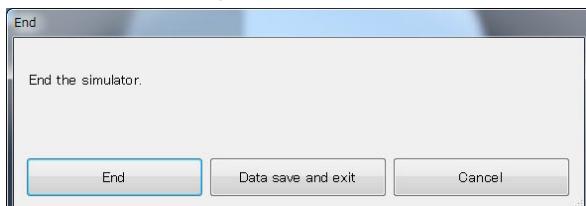
## 4.8. How to Exit FQ2 Simulator

This section describes how to exit FQ2 Simulator.

1. Stop inspection.
2. Click **File** on **Menu bar**.
3. Click **End**.



4. The **End** dialog box appears.



Elements	Description
End button	You will automatically exit FQ2 Simulator.
Data save and exit button	The whole setting data made on FQ2 Simulator (*1) are saved and FQ2 Simulator is closed.  The setting data will be saved in the following destination. C:\Users\User name\Documents\OMRON FQ\SDCard\SettingData\FQ2-S_Sim*** *2 .
Cancel button	The <b>End</b> dialog box will close without exiting FQ2 Simulator.

\*1 The whole setting data here includes the scene group data, sensor system data, calibration group, and dictionary data.

\*2 xxx as in FQ2-S\_Simxxx is the version number of FQ2 Simulator.

5. Click **End** or **Data save and exit**.



## Useful information

- If you exit FQ2 Simulator after saving the whole setting data, the setting data will be loaded at the next startup.

## 4.9. Troubleshooting

Issue	Remedy
Data created on the FQ2 sensor cannot be loaded to FQ2 Simulator.	<p>1. Confirm that the model of the FQ2 sensor is supported by FQ2 Simulator. Supported model: FQ2-S1, S2, S3, S4, CH1. Unsupported model: FQ-MS, CR1, CR2.</p> <p>2. The software version of FQ2 Simulator and the FQ2 sensor are different. Upgrade the two software to the most up-to-date version to match them.</p>
Data created on FQ2 Simulator cannot be loaded on the FQ2 sensor.	<p>1. Confirm that the model of the FQ2 sensor is supported by FQ2 Simulator. Supported model: FQ2-S1, S2, S3, S4, CH1. Unsupported model: FQ-MS, CR1, CR2.</p> <p>2. The software version of FQ2 Simulator and the FQ2 sensor are different. Upgrade the two software to the most up-to-date version to match them.</p>
When you load the all sensor setting data, scene data, or scene group data to the FQ2 sensor, some inspection items are missing.	<p>1. The software version of FQ2 Simulator and the FQ2 sensor are different. Upgrade the two software to the most up-to-date version to match them.</p> <p>2. Confirm that inspection items registered on FQ2 Simulator are supported by the model of the destination FQ2 sensor. FQ2 sensor automatically deletes unsupported inspection items when loading the setting data.</p>

<p>When you load the all sensor setting data, scene data, or scene group data created on FQ2 Simulator to the FQ2 sensor, the judgment result turns NG for unregistered model.</p>	<p>Confirm that the images used for setting inspection items on FQ2 Simulator are logged on the destination FQ2 sensor.</p> <ul style="list-style-type: none"> <li>If the color setting differs between registered image and measured image, the judgment may turn NG.</li> </ul>
<p>When you load the all sensor setting data, scene data, or scene group data created on the FQ2 sensor to FQ2 Simulator, the judgment result turns NG for unregistered model.</p>	<p>FQ2 Simulator determines the inspection region and model region based on the last loaded image data. Confirm that the loaded image data is logged on the FQ2 sensor you want to use.</p>

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